International Application
PCT/EP2003/012610
Amended claims enclosed to
the response to the Written Opinion

## Claims:

- 1. Recombinant poxvirus comprising in the viral genome at least two expression cassettes, each comprising the cowpox ATI promoter or a derivative thereof or a subsequence of the ATI promoter or the derivative thereof and a coding sequence, wherein the expression of the coding sequence is regulated by said promoter, derivative or subsequence and wherein the derivative of the cowpox ATI promoter is a sequence that has a homology of at least 60% when compared to the sequence of SEQ ID.: No. 1 and/or a sequence in which not more than 6 nucleotides are substituted, deleted and/or inserted in the sequence of SEQ ID.: No.1, wherein the subsequence of the ATI promoter has a length of at least 10 nucleotides of the sequence of SEQ ID.: No. 1 and wherein the promoter, derivative or subsequence has the biological activity of being active as a promoter.
- 2. Recombinant poxvirus according to claim 1, wherein the promoter, derivative or subsequence has the biological activity of being active as a Vaccinia virus late promoter.
- 3. Recombinant poxvirus according to anyone of claims 1 to 2, wherein the promoter, derivative or subsequence comprises nucleotides 25 to 29 or 22 to 29 of SEQ ID.: No.1.

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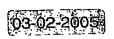
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- 4. Recombinant poxvirus according to anyone of claims 1 to 3, wherein the promoters, derivatives or subsequences in the recombinant poxvirus are the same.
- 5. Recombinant poxvirus according to anyone of claims 1 to 4, wherein at least two expression cassettes are inserted into the same insertion site in the poxvirus genome.
- 6. Recombinant poxvirus according to anyone of claims 1 to 5, wherein the promoter in at least one of the expression cassettes has the sequence of SEQ ID: No. 1
- 7. Recombinant poxvirus according to anyone of claims 1 to 6, wherein the promoter in at least one of the expression cassettes is a derivative of the ATI promoter or a subsequence of the ATI promoter or a derivative thereof.
- 8. Recombinant poxvirus according to anyone of claims 1 to 7, wherein the poxvirus is selected from the group consisting of orthopoxviruses and avipoxviruses.
- 9. Recombinant poxvirus according to claim 8, wherein the orthopoxvirus is a vaccinia virus and wherein the avipoxvirus is selected from canarypoxvirus and fowlpoxvirus.
- 10. Recombinant poxvirus according to claim 9, wherein the vaccinia virus is modified vaccinia virus strain Ankara (MVA), in particular MVA-BN and MVA 575, deposited under numbers V00083008 and V00120707, respectively, at the European Collection of Animal Cell Cultures (ECACC).

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- 11. Recombinant poxvirus according to claim 10, wherein at least one of the expression cassettes is inserted in a naturally occurring deletion site of the MVA genome with respect to the genome of the vaccinia virus strain Copenhagen.
- 12. Recombinant poxvirus according to anyone of claims 1 to 11, wherein at least one of the expression cassettes is inserted in an intergenic region of the poxvirus genome.
- 13. Recombinant poxvirus according to anyone of claims 1 to 12, wherein at least one of the coding sequences codes for least one antigen, antigenic epitope, and/or a therapeutic compound.
- 14. Recombinant poxvirus according to anyone of claims 1 to 13 as vaccine or medicament.
- 15. Vaccine or pharmaceutical composition comprising a recombinant poxvirus according to anyone of claims 1 to 13.
- 16. Use of the recombinant poxvirus according to anyone of claims  $1\ ext{to}$  13 for the preparation of a vaccine or medicament.
- 17. Method for introducing coding sequences into target cells comprising the infection of the target cells with the virus according to anyone of claims 1 to 13.
- 18. Method for producing a peptide, protein and/or virus comprising
  - a) infection of a host cell with the recombinant poxvirus according to anyone of claims 1 to 13,
  - b) cultivation of the infected host cell under suitable conditions, and

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- c) isolation and/or enrichment of the peptide and/or protein and/or viruses produced by said host cell.
- 19. Method for affecting, preferably inducing an immunological response in a living animal body including a human comprising administering the virus according to anyone of the claims 1 to 13 or the composition or vaccine according to claim 15 to the animal or human to be treated.
  - 20. Method according to claim 19 comprising the administration of at least  $10^2$  TCID<sub>50</sub> (tissue culture infectious dose) of the virus.
  - 21. A cell containing the virus according to any of claims 1 to 13.
  - 22. A method for the production of a recombinant virus according to anyone of claims 1 to 13 comprising the step of inserting at least two expression cassettes into the genome of a poxvirus.

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